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AUTHOR	Ongel, Sevinc; Capa, Yesim; Vellom, R. Paul
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ABSTRACT

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A Study of the Effectiveness of a Preservice Teacher Education Scheme

Sevinc Ongel, Yesim Capa, R. Paul Vellom

The Ohio State University
Columbus, Ohio

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Correspondence to Sevinc Ongel: ongel.1@osu.edu

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Abstract

A study was designed to investigate the effectiveness of a preservice teacher evaluation scheme used in the field experience component of the M.Ed. program in Mathematics, Science, and Technology Education at the Ohio State University. Subjects were student teachers (n=34), mentor teachers (n=34) and university-based supervisors (n=6). Student teachers' performances were assessed independently by student teacher, mentor, and supervisor, at two intervals (midterm and final three-way conferences). Data were collected in the form of Intern Evaluation Worksheets, as well as observations of supervisor meetings. Data from the worksheets were analyzed using 2-way ANOVA. Results indicated significant differences in evaluation scores among evaluation groups in the midterm conference, as well as between the two evaluation periods. Findings aid in better understanding the dynamics take place during the three way conference evaluations, as well as form a basis for transition to new ways of teacher performance assessment.

Introduction

" Preservice teachers get their first major opportunity to test their teaching skills when they student teach. The development of perceived teaching adequacies during the student teaching experiences should be an affective predictor of future success." (Wood and Eicher, 1989).

The effectiveness of novice teachers can be estimated by their performance in the field experiences, if the performance assessments used in these time periods are compatible. Currently, evaluations of both first year teachers and preservice teachers show a great deal of variation. In response to the concerns about these variations as well as the quality of teaching; Carnegie forum and Holmes group declared recommendations (Lucas, 1997) to the educational community, which resulted in the standards for teaching and for the preparation of teachers. These standards have served as a framework with the goals of increasing the quality of inservice teachers but also greatly impacting the teacher performance evaluation process. (Yinger, 1999). One second-generation example of this impact is the Classroom Performance Assessment Test, also known as Praxis III; through which entry-year teachers will be assessed. The state of Ohio declared that it would be the first to implement this system statewide beginning in 2003. (Ohio Department of Education, 2000.)

The current practice of teacher performance evaluation in teacher education programs involves two types of evaluations. Summative evaluations are used to make judgmental decisions about the quality of teachers' performances. This type of evaluation is used for accountability and to determine if a teacher meets minimum standards. (Dagley and Orso, 1991). Formative evaluations on the other hand, are ongoing processes and are used to promote teacher growth by improving teacher performance. This type of evaluation requires supportive partnerships, which can provide feedback to teachers for making decisions about how they can improve their teaching.

The supervisory evaluations (formative) of preservice teachers in teacher education programs are typically conducted by supervisors and mentor teachers. In the last decade with the increase use of multiple source evaluations, the inclusion of student teachers in this process is becoming more and more common. The benefits of using this

type of evaluation is stated by Dyer as " The fundamental premise of multiple source evaluation is that data gathered from multiple perspectives are more comprehensive and objective than data gathered from only one source." (Dyer, 1991, p.35) However, this type of multiple source evaluation and feedback has some drawbacks. Despite the desire of the parties involved, the necessary time and effort to build these supportive partnerships are the two major disadvantages of the process. For example after classroom observations, neither the student teacher nor the supervisor have adequate time reflect on the lesson taught. Furthermore, mentor teachers may be unclear about the expectations of their role and often express concerns about the insufficient communication and support form the university. Moreover, some mentor teachers still consider the supervisors in the role of an inspector rather then a part of a collaborative effort. (Bolin and Panaritis, 1992). Therefore, while building these collaborative partnerships that will be active in multisource evaluations all of these drawbacks need to be taken into consideration.

Performance evaluations (summative), which are the key components of the supervisory evaluation is typically conducted both during and at the end of the supervisory process. Active involvement of both the mentor teacher and the supervisor is desirable in this process. However, in practice, the input of mentor teachers in the decision making stages is often so minimized that the evaluation becomes a sole judgment of the supervisor, a situation which has been seriously questioned in the last decade. (Rust, 1992).

During preservice teacher evaluation, the interaction between supervisory and performance evaluations are so intricate that it is hard to think one separately from the other. Hazi (1994) advocates combining these two evaluation types by stating, "disentangling the supervision-evaluation knot is impossible". Furthermore, Hunter (1988) views formative and summative evaluations as sequential processes, which cannot be conducted separately. Since the interactions between these two evaluations are so strong and the processes are so compatible then the use of multiple source evaluation should be considered in performance evaluations as well. Even the minimum involvement of mentors as well as the student teachers in the decision-making process will overweigh the disadvantages of not including them at all.

Active participation of mentors, supervisors, and student teachers in both supervisory processes as well as decision-making processes could benefit each party in multiple ways. It could give mentor teachers clearer descriptions of their roles and on the way could help them to change their supervisory mindset away from supervisor as an inspector. Opportunities for student teachers to jointly think through about their teaching with supervisors and mentors as well as to participate in the decision making process could lead to greater independence and reflection, a significant goal in most teacher education programs. This reflective approach could also help them meet challenges once they enter the profession. With increased involvement of mentor teachers, supervisors could find more opportunities to interact with the student teachers and help them grow professionally. Therefore, in all steps of preservice teacher evaluation, the use of multiple source evaluation will not only improve the engagement of the parties involved and provide each benefits, but will also increase the likelihood of obtaining a comprehensive picture of personal performance of the person being evaluated.

The teacher preparation program at OSU uses a triadic supervision model within which student teachers' teaching competencies are assessed during field experiences. The

performance assessment conducted during the three-way conferences each quarter involves participation and input from the student teacher, mentor and the supervisor. Both mid- and final evaluations rely on effective group dynamics and performance.

The main purpose of this study is to examine the variance existing among these three evaluation groups (student teachers, mentors, and supervisors), as well as the variance between the two evaluation periods (mid- and final evaluation). The questions that shaped this study are:

1. Do the means of student teacher performance scores differ significantly among evaluation groups (student teacher, mentor, and supervisor)?
2. Do the means of student teacher performance scores differ significantly between the two evaluation periods (mid and final evaluation)?
3. Is there any interaction between the evaluation group and evaluation period?

Methodology

The study was conducted during the winter quarter of 2001 as the student teachers began taking responsibility for teaching. The data were gathered from the evaluation instrument currently used in the program that has Likert type performance scales related to an inventory of teaching parameters. Test-retest reliability of the instrument was 0.78. The specific performance items on the instrument derived from the following sources: a) previous evaluation inventories used at OSU, b) the experiences of the supervisors, c) the comments of the mentor teachers, d) suggestions from student teachers, and e) related literature. The instrument also included commentary sections for the parties to reflect on student teachers' performances. Due to the concerns from student teachers, these sections of the instrument were not included in the study.

This instrument formed the basis for discussion sessions among student teachers, mentors, and supervisors. In these conferences, the student teacher was independently evaluated by all three parties (self, mentor, and supervisor) through a process of reporting and discussing evaluative ratings, and future goals were set for professional development of the student teacher. The instrument was administered twice during the student teaching period. The first administration (mid-evaluation) was conducted during the fifth week; and the second administration (final evaluation) was conducted during the tenth week of the quarter.

In addition to the three-way conferences, the program offered multiple opportunities to reinforce the group dynamics between the parties. The student teaching experience was supported by a weekly professional seminar that lasted for the entire quarter, with each session followed by supervisor-student teacher group discussions. Furthermore, supervisors met regularly to discuss concerns and ensure consistency in the supervision/evaluation process. Researchers attended these meetings to observe and record field notes, in order to more fully understand the process and enable better interpretation of the results.

The sample was 37 student teachers, 37 mentors, and 8 supervisors. The instruments of the parties who gave consent to the study were collected after the three-way conferences and used for analysis.

The data then were analyzed by using two-way ANOVA to investigate the effects of evaluation group and evaluation time on the student teachers' performances.

Furthermore, one-way ANOVA was conducted in order to examine group differences both in mid- and final evaluation periods.

Results and Discussion

A 3x2 (Evaluation group x Evaluation period) factorial analysis of variance was conducted on the evaluation scores. All statistical tests were conducted at the $\alpha = .05$ level of significance. Table 1 contains means and standard deviations for performance scores by groups (student teacher, mentor, and supervisor) in two different time periods (mid and final). It can be observed that the group means increased from 4.94 to 5.29 from mid to final evaluations.

TABLE 1
Means and Standard Deviations for Teacher Performance Scores, by Evaluation Groups in Mid and Final Evaluation Periods

	Mid Evaluation			Final Evaluation		
Evaluation Group	M	SD	n	M	SD	n
Student Teacher	4.53	.53	21	5.10	.47	22
Mentor	5.16	.67	23	5.32	.81	23
Supervisor	5.07	.45	28	5.41	.39	28
Total	4.94	.61	72	5.12	.58	73

The main effects of evaluation groups and evaluation period as well as their interaction are presented on Table 2.

TABLE 2
Analysis of Variance for Teacher Evaluation Scores

Source	SS	df	MS	F
Evaluation Group (G)	4.57	1	4.57	14.42*
Evaluation Time (T)	5.47	2	2.74	8.64*
G X T	.99	2	.49	1.56
Error	44.00	139	.32	

*$p < .05$

According to the results, no significant evaluation period and group interaction was found. On the other hand, the main effects of evaluation groups and evaluation

period were significant at α=. 05. The post-hoc comparison (Tukey, HSD) showed that scores of student teachers were significantly different from both scores of mentors and supervisors (Mean difference$_{\text{student teacher-mentor}}$= .42, p< .05; Mean difference$_{\text{student teacher-supervisor}}$= .42, p< .05). However, there was no significant difference between mentor and supervisor scores.

Further analysis of the evaluation times by using one-way ANOVA revealed that at the mid-evaluation, the performance scores of mentors and supervisors significantly differed from those of student teachers (F (2, 72)=8.611, p< .05). However, no significant difference was observed among groups in the final three-way conference (F (2, 73) = 1.764, p< .05).

The comparisons of the midterm and final evaluations indicated an improvement in performance scores as well as a decreased variability among evaluation groups. It is highly possible that as time progresses, the collaboration among parties increases. This collaboration may be characterized by a "landmarking effect" of the midterm 3-way conference. This being the first time that these 3 parties have engaged in this important activity, the midterm conference became the first occasion upon which a common evaluation scale is applied to a student teacher's performance, and also the first time that ordinal values were assigned to the performance by each party. In many ways, then, this was the first occasion for the student teacher to see and hear how valued others viewed their performance on a number of dimensions of teaching practice during this placement. Likewise, this conference was the first occasion for mentor and supervisor to state these values and to hear how they compared to the values stated by the two others. In many ways there was a recursive feedback loop that involved stating an evaluation, hearing others' judgments, internalizing consonance or dissonance between the values, discussing perceptions as justifications, and coming to agreement on a value that served as a baseline for the student teacher's professional growth during the second half of the placement (and thus for the final three-way conference). In this way, the midterm conferences were seen to enable increased collaboration by "landmarking" for all parties the performance of the student teacher on various dimensions of teaching reflected on the Intern Evaluation Worksheet.

A second finding, that student teachers evaluated themselves lower than both mentors and supervisors, was also discussed during the supervisor meetings. There, supervisors commented on the insufficient teaching experiences of student teachers. The reason for this difference, in our view, may be related to the description of certain stages that student teachers go through described by Fuller (1969). The first stage Fuller identified is the self-stage, where the student teacher is mostly concerned with self-oriented pre-occupations. A second stage, called the task stage, is characterized by the student teacher's focus on how to conduct tasks that surround teaching. These stages form the developmental processes of both pre-service and novice teachers. Fuller proposed that experienced teachers attain the third stage, in which their primary concern is the impacts of their teaching on student learning. The increase in student teacher evaluations from midterm to final seems to mirror progression in the developmental stages of student teachers described by Fuller.

Implications

The results of this study enable the teacher education program at this university to better understand the teacher evaluation scheme and how it works. The evaluation scheme is based on a collaborative model that places emphasis on the mentor-student teacher relationship, and the university supervisor plays a supporting role to this relationship. In this collaborative model, student-teacher self-evaluation is highly valued, and in the two evaluation conferences, student teachers speak first, followed by mentor and supervisor. The data from this study give strong indications of some of the dynamics at play in these conferences. These indications may be useful to other teacher educators who use a collaborative model.

This study suggests that the triadic supervision model is an effective tool in obtaining a comprehensive picture of student teacher performance. Therefore, multiple source evaluations are recommended (with the active participation of student teachers, mentors and supervisors) for those in the science education community who are involved in preservice teacher education.

As school districts in Ohio transition to the Praxis III entry-year teacher performance evaluation, it is essential that pre-service teacher education programs become informed about the new system. They must transition to new teacher evaluation schemes, so that graduates of these programs are better supported in the entry years, when many energetic and talented people leave the profession. This study provides a baseline upon which to base the transition to Praxis III-style evaluation, linking our past with our future.

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